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ABSTRACT

To assess the pervasiveness of quality circles in American corporations, as well as to ascertain perceptions of their impact in terms of various organizational outcomes, a 45-item questionnaire was mailed to personnel directors of the Fortune 500 corporations. Some time after the initial mailing, a follow-up mailing was executed to maximize the response rate. A total of 123 questionnaires was returned, 73 for corporations using quality circles and 50 for corporations not using them. The responses supported eight conclusions, among them: (1) companies vary widely in how long they have had quality circles, how many circles they have functioning, and how many facilitators they employ to run them; (2) the identification of job related problems is the most important objective of a quality circle program, the least important being the development of group dynamics skills among employees; (3) training of circle leaders and circle members generally includes components on group dynamics, data collection methods, brainstorming techniques, problem-solving, cause and effect analysis, Pareto Analysis, and presentation techniques; (4) about one-half of the companies have formally evaluated their quality circle programs; and (5) the circles have effected a moderate decrease in production errors. (HOD)

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THE PERVASIVENESS AND IMPACT OF CORPORATE QUALITY CIRCLES: A SURVEY OF MAJOR AMERICAN CORPORATIONS

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Abstract

A survey of major American corporations was conducted to ascertain the pervasiveness and perceived impact of corporate quality circles. A 45-item questionnaire was mailed to the personnel directors of the Fortune 500 corporations to secure this assessment. The results of the data from 73 responding companies and their implications are discussed.

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THE PERVASIVENESS AND IMPACT OF CORPORATE QUALITY CIRCLES: A SURVEY OF MAJOR AMERICAN ORGANIZATIONS

In recent years increasing interest has been shown by American corporations in the quality circle concept. In line with this increase, scores of books and trade journal articles have appeared describing step-by-step techniques for implementing them and documenting success stories of their use in the corporate context.[1]

The purpose of this study was to assess the pervasiveness of quality circles in American corporations, as well as to ascertain perceptions of their impact in terms of various organizational outcomes. A 45-item questionnaire, designed by the investigators,[2] was mailed to personnel directors of the Fortune 500 corporations.[3] Some time after the initial mailing, a follow-up mailing was executed to maximize the corporate response rate. A total of 123 questionnaires were returned, seventy-three for corporations utilizing quality and fifty for corporations not utilizing quality circles. The seventy-three questionnaires from corporations employing quality circles were submitted to subsequent analysis.

Organizations Surveyed

Of the seventy-three corporations surveyed having quality circles, nineteen percent could be designated as national in scope, while eighty-one percent could be designated as international in scope. The average number of employees for these companies was 27,000. Sixteen of those corporations surveyed were not unionized. Products provided by the companies studied included chemicals, electronics, pharmaceuticals, textiles, office equipment, automotive parts, and farm equipment.

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Utilization of Corporate Quality Circles

When asked how long their companies had utilized quality circles, respondents indicated a range from one month to seven years, with an average of three years. Companies varied considerably in the number of quality circles they had in operation at the time of responding to the questionnaire, ranging from two to 700, but averaging sixty-six circles.

The corporate representatives were asked to rank order the objectives of their quality circle programs. As shown in Table 1 in the appendix of this paper, the number one objective was generally seen as being the identification of job-related problems. The least important objective among the six given was found to be the development of group dynamic skills among employees. Respondents were split over the second, third, fourth, and fifth objectives: (a) an equal number saw the stimulation of work group teamwork as number one, two, and three ranking objective; (b) the improvement of worker morale and motivation was seen roughly as a middle-ranked objective (equally distributed among the first four positions); (c) the improvement of production methods was seen as a number six objective by many but as a number two objective by quite a few; and (d) the stimulation of supervisor-subordinate communication was perceived generally as a fourth or fifth level objective.

Respondents were asked to indicate which of six items given applied to the role of the quality circle facilitator in their companies. For sixty-nine percent of the companies, the items listed all applied. More specifically, ninety-seven percent of the firms indicated that it was a facilitator's job to promote and help implement the quality circle program. For eighty-five percent of the companies, facilitators were charged with training quality circle members. Guiding initial circle meetings was reported as a responsibility of a circle facilitator in eight percent of the firms. Solving

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problems which arise within a circle group's functioning is a task undertaken by a facilitator in seventy percent of the organizations. Facilitators attend and monitor circle meetings periodically in eighty-nine percent of the companies. Finally, in sixty-nine percent of the firms, facilitators serve as liaisons in the formal presentation of problems and proposed solutions by circle members to management. In terms of the number of facilitators in their corporations, respondents provided a wide range of answers, from one to 150 full-time and part-time; the average number of facilitators in these firms was reported to be fourteen.

For the majority of the organizations (seventy-five percent), circle meetings are held on a weekly basis. For seventy-seven percent of the firms, these meetings are one hour in length. The work group supervisor serves as the quality circle leader in forty-nine percent of the corporations.

Participation in quality circles is almost totally voluntary in the organizations surveyed (ninety-six percent). Circle size ranges in the companies from five to twenty-five; the average number of circle members is nine, the mode for the companies is eight members. In thirty percent of the organizations, the circles have an indefinite life span. In fifty-three percent of the firms surveyed, supervisors are not required to participate in the corporate quality circle program; in thirty percent supervisors are required to do so. A supervisor is required to involve his/her workgroup in the program in only eleven percent of the firms; in seventy-four percent of the companies, this is not the case.

Training of circle leaders is generally conducted by corporate circle facilitators in the organizations surveyed (fifty-eight percent). This

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training consists of a variety of components in most of the firms: (a) quality circle program goals, ninety-three percent; (b) quality circle program operation, eighty-six percent; (c) leadership, eighty-nine percent; (d) group dynamics, eighty-eight percent; (e) brainstorming techniques, ninety-five percent; (f) problem-identification/problem-solving techniques, ninety-five percent; (g) data collection methods, ninety-two percent; (h) cause-and-effect analysis, ninety-three percent; (i) Pareto Analysis, eighty-six percent; and (j) presentation techniques, eighty-two percent.

Training of circle members is generally conducted by the circle facilitators and/or leaders in the companies surveyed (sixty-three percent). This training consists of a variety of components in many of the organizations: (a) group dynamics, sixty-seven percent; (b) brainstorming techniques, ninety-two percent; (c) data collection methods, ninety-three percent; (d) problem-identification/problem-solving techniques, ninety-six percent; (e) cause-and-effect analysis, ninety-two percent; and (f) presentation techniques, eighty-nine percent.

When asked the percent ratio of blue collar and white collar participants in their quality circle programs, corporate representatives responded as follows: (a) exclusively blue collar workers, twelve percent; (b) 75 percent-25 percent blue collar to white collar workers, fifty-eight percent; (c) 50 percent-50 percent white collar/blue collar workers, nineteen percent; (d) 75 percent-25 percent white collar to blue collar workers, eight percent; and (e) exclusively white collar workers, three percent. Clearly, the majority of companies fall in the 75 percent-25 percent blue collar to white collar workers category.

Perceived Impact of Corporate Quality Circles

When asked if their companies had ever formally evaluated their quality

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circle programs, fifty-one percent of the corporate representatives reported that their firms had done so, forty-nine percent indicated that their firms had not done so.

The corporate representatives were asked to respond to the possible effects of quality circles in their firms in terms of twelve factors associated with their overall functioning. Tabel 2 in the appendix of this paper reflects the responses to these items. In all categories, respondents genetally saw at least moderate impact from the implementation of quality circles in their companies.

More specifically, sixty-one percent of the respondents reported a moderate decrease in product errors as a result of their quality circle program, whereas thirty-three percent only saw a slight decrease. In terms of enhancing product/service quality in their companies fifty-five percent of the respondents perceived a moderately positive impact, while thirty-four percent perceived a slightly positive impact. Forty-eight percent of the respondents reported an extreme increase in effective teamwork, while forty-four percent reported a moderate one. Employee job involvement was reported to have increased extremely by forty-eight percent of the respondents and moderately by another forty-five percent. Fifty-nine percent of those surveyed perceived a moderate increase in employee motivation as a result of their corporate quality circle program, while another twenty-five percent perceived an extreme increase in employee motivation. Fifty-six percent felt that the quality circle program implemented in their companies had produced a moderate problem-solving capability, while another twenty-nine percent viewed this as an extreme capability.

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In terms of a "problem prevention" attitude building within the corporation, fifty-five percent of the respondents saw it on a moderate level, while thirty-four percent perceived it on a slight level. Forty-six percent believed their corporation had undergone moderately improved vertical communication with the adoption of a quality circle program; another thirty-four percent perceived an extreme improvement in this regard, while twenty percent additional respondents perceived only a slight improvement. In terms of horizontal communication improvement in their organizations, forty-six percent of those surveyed believed that moderate positive change had taken place; another thirty-eight percent viewed the change as being extreme. Employee group dynamics skills have been moderately enhanced as a result of quality circle experiences, according to fifty-six percent of the corporate representatives. Forty-nine percent of the respondents believe that those in management positions have been moderately sensitized to production problems in their companies through quality circles; thirty-two percent perceived a slight sensitization of management. Fifty-five percent of those surveyed indicated a moderate level of cost reduction with the inception of quality circles in their firms, while twenty-nine percent perceived only a slight change in this regard.

When asked about circle member evaluation of the corporate quality circle program, respondents indicated that: (a) for twenty-two percent of the companies, the leader is evaluated by members; (b) for twenty-three percent of the companies, the facilitator is evaluated by members; (c) for fifty-two percent of the companies, the process as a whole is evaluated by members; (d) for twenty-two percent of the companies, circle members evaluate all three aforementioned components; and (e) for thirty-two percent of the companies, none of these components is evaluated by circle members.

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Sixty-six percent of the respondents reported that their corporations view their quality circle program as a form of organizational development, nine percent as an organizational intervention strategy, and nine percent as both. Ninety-seven percent of the companies view their quality circle programs as a means to provide for direct employee participation in organizational functioning. Ninety-six percent of the firms surveyed intend to expand their current quality circle program.

When asked if their companies had encountered any problems as a result of implementing their quality circle program, several concerns were brought up by the firms: (a) negative union reaction, twenty-two percent; (b) negative reactions of uninvolved employees, sixteen percent; (c) lack of management response to circle proposals, fifteen percent, (d) lack of member cooperation, fourteen percent; (e) difficulty in role shift for supervisors to circle leaders, twelve percent, (f) inadequate training, twelve percent; (g) meeting brevity, four percent; (h) program cost, four percent; and (i) lack of congruence between company problems and quality circle context, four percent. Finally, when asked in what ways the benefits of quality circles outweighed their costs, twenty-three percent of the company representatives listed cost savings as a factor, fifteen percent gave increased employee involvement in organizational functioning as a factor, eleven percent mentioned increased employee morale, and eight percent gave increased employee motivation as a factor.

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Conclusions

On the basis of the foregoing analysis, a number of conclusions can be reached in regard to the pervasiveness and perceived impact of quality circle programs in American corporations:

1. Companies vary widely in how long they have had quality circles, how many circles they have presently functioning, and how many facilitators they employ to run them; however, there is consistency among them in how often their circles meet (weekly), how long their meetings are (one hour), and their attitude about who participates in them (voluntary).
2. The identification of job-related problems is the most important objective of a quality circle program, the least important objective being the development of group dynamics skills among employees. Middle-range quality circle objectives appear to be the stimulation of teamwork within workgroups, the improvement of worker morale and motivation, the stimulation of supervisor-subordinate communication, and the improvement of production methods.
3. Training of circle leaders and circle members generally includes components on group dynamics, brainstorming techniques, problem-identification/problem-solving techniques, data collection methods, cause-and-effect analysis, Pareto Analysis, and presentation techniques. Circle leaders also generally receive training in quality circle program goals and quality circle program operation. The least frequent training area offered is in group dynamics for circle members (sixty-seven percent of the firms). All other training activities are

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offered in at least eighty-two percent of the firms. Training of circle leaders is typically conducted by facilitators; training of circle members is typically conducted by facilitators and/or leaders.

4. Quality circle programs generally involve a ratio of three to one blue collar to white collar worker participants.
5. Workgroup supervisors serve as circle leaders in about one-half of the corporate circle programs. Supervisors not generally required to involve their workgroups in the corporate circle program.
6. About one-half of the companies have formally evaluated their quality circle programs. Circle members evaluate the process as a whole more frequently than either the leader or facilitator; all three are evaluated by circle members in less than one-fourth of the companies.
7. The incorporation of quality circle programs has, generally speaking, affected a moderate decrease in product errors; a moderate enhancing of product/service quality; a moderate to extreme increase in effective teamwork; a moderate to extreme increase in employee job involvement; a moderate increase in employee motivation; a moderate increase in corporate problem-solving capability; a moderate increase in an attitude of "problem prevention"; a moderate to extreme increase in improved vertical communication and horizontal communication; a moderate increase in employee group dynamics skills; a moderate increase in management sensitivity to production problems at all levels; and a moderate increase in cost reduction.
8. The most frequent problems encountered by companies offering quality circle programs are negative union reactions (twenty-two percent of the firms), negative reactions of uninvolved employees (sixteen percent of the firms), lack of management support of circle program

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proposals (fifteen percent of the firms), lack of member cooperation (fourteen percent of the firms), inadequate training (twelve percent of the firms), and difficulty of shifting supervisors to the role of circle leader (twelve percent of the firms).

9. Finally, nearly all American companies having quality circle programs intend to expand them.

This investigation suggests that incorporation of quality circles in organizations produces various positive outcomes, not only in terms of desired corporate economic outcomes (e.g., cost reduction, reduced errors), but also indirect employee outcomes which ultimately may affect traditional economic outcomes (e.g., teamwork, job involvement, communication effectiveness, and motivation). While these outcomes may be achieved through quality circle experiences, some problems encountered by companies need further examination for rectification, namely union resistance to these activities, non-optimal management support for these programs, and negative reactions among uninvolved employees to these programs.

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FOOTNOTES

[1]See, for example, Ralph Barra, Putting Quality Circles to Work: A Practical Strategy for Boosting Productivity and Profits, New York: McGraw-Hill Book Company, 1983; Donald L. Dewar, The Quality Circle Guide to Participation Management, Englewood Cliffs, NJ: Prentice-Hall, Inc., 1980; Laurie Fitzgerald and Joseph Murphy, Quality Circles: A Strategic Approach, San Diego, CA: University Associates, 1982; Sud Ingle, Quality Circles Master Guide: Increasing Productivity with People Power, Englewood Cliffs, NJ: Prentice-Hall, Inc., 1982; William L. Mohr and Harriet Mohr, Quality Circles: Changing Images of People at Work, Reading, MA: Addison-Wesley, 1983; Joel E. Ross and William C. Ross, Japanese Quality Circles and Productivity, Reston, VA: Reston Publishing Company, 1982.

[2]A copy of the instrument may be obtained upon request from the authors.

[3]Fortune, May 3, 1982, pages 260-278.

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TABLE 2

Perceived Effect of Corporate Quality Circles

	Not at All	Slightly	Moderately	Extremely
Reduced product errors n = 67	3 (5%)	22 (33%)	41 (61%)	1 (1%)
Enhanced product/service quality n = 68	3 (4%)	23 (34%)	37 (55%)	5 (7%)
Inspired more effective teamwork n = 69	0 (0%)	7 (10%)	30 (44%)	32 (46%)
Promoted employee job involvement n = 69	0 (0%)	5 (7%)	31 (45%)	33 (48%)
Increased employee motivation n = 69	0 (0%)	11 (16%)	41 (59%)	17 (25%)
Created a problem-solving capability n = 68	0 (0%)	10 (15%)	38 (56%)	20 (29%)
Built an attitude of "problem prevention" n = 65	3 (5%)	22 (34%)	36 (55%)	4 (6%)
Improved vertical communication n = 70	0 (0%)	14 (20%)	32 (46)	24 (34%)
Improved horizontal communication n = 69	0 (0%)	11 (16%)	32 (46%)	26 (38%)
Enhanced employee group dynamics skills n = 68	2 (3%)	17 (25%)	38 (56%)	11 (16%)
Sensitized management to production problems at all levels n = 69	3 (4%)	22 (32%)	34 (49%)	10 (15%)
Provoked cost reduction n = 69	2 (3%)	20 (29%)	38 (55%)	9 (13%)

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TABLE 1

Rank Ordering of Corporate Quality Circle Program Objectives

	Number 1	Number 2	Number 3	Number 4	Number 5	Number 6
To identify job-related problems n = 67	28 (42%)	13 (19%)	11 (16%)	7 (11%)	7 (11%)	1 (1%)
To stimulate teamwork within work groups n = 67	17 (26%)	16 (24%)	16 (24%)	11 (16%)	6 (9%)	1 (1%)
To improve worker morale and motivation n = 68	13 (19%)	13 (19%)	14 (21%)	15 (22%)	10 (15%)	3 (4%)
To develop group dynamics skills among employees n = 64	2 (3%)	4 (6%)	5 (8%)	6 (9%)	17 (27%)	30 (47%)
To improve production methods n = 65	7 (11%)	14 (21%)	9 (14%)	10 (15%)	7 (11%)	18 (28%)
To stimulate supervisor-subordinate communication n = 66	9 (14%)	8 (12%)	10 (15%)	14 (21%)	16 (24%)	9 (14%)

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